

# *Rethinking the literature on the performance of Chinese multinational enterprises*

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## **RETHINKING THE LITERATURE ON THE PERFORMANCE OF CHINESE MULTINATIONAL ENTERPRISES**

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### **ABSTRACT**

We synthesize the literature on Chinese multinational enterprises (MNEs) and find that much of the prior research is based on as few as a dozen case studies of Chinese firms. They are so case-specific that it has led to a misplaced call for new theories to explain Chinese firms' internationalization. In an attempt to better relate theory with empirical evidence, we examine the largest 500 Chinese manufacturing firms. We aim to find out the number of Chinese manufacturing firms to be true MNEs by definition, and to examine their financial performance relative to global peers using the financial benchmarking method. We develop our theoretical perspectives from new internalization theory. We find that there are only 49 Chinese manufacturing firms to be true MNEs, whereas the rest is purely domestic firms. Their performance is poor relative to global peers. Chinese MNEs have home country bound firm-specific advantages (FSAs), which are built upon home country-specific advantages (home CSAs). They have not yet developed advanced management capabilities through recombination with host CSAs. Essentially, they acquire foreign firms to increase their sales in domestic market, but they fail to be competitive internationally and to achieve superior performance in overseas operations. Our findings have important strategic implications for managers, public policy makers, and academic research.

**Keywords:** Chinese MNEs, financial benchmarking, industry financial data, new internalization theory, overseas performance.

**Running Title:** Rethinking Chinese MNE Performance Literature

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## INTRODUCTION

The emergence of leading Chinese multinational enterprises (MNEs) such as Huawei, Lenovo, and Haier has stimulated academic research on the internationalization of Chinese MNEs. These include research on the driving forces of Chinese outward foreign direct investment (OFDI) (Buckley, Clegg, Cross, Liu, Voss, & Zheng, 2007; Erdener & Shapiro, 2005; Liu, Buck, & Shu, 2005; Luo & Wang, 2012); entry mode strategy (Cui & Jiang, 2010, 2012; Meyer, Ding, Li, & Zhang, 2014); cross-border mergers and acquisitions (M&As) (Deng, 2009; Sun, Peng, Ren, & Yan, 2012); and China's home country institutions (Luo, Xue, & Han, 2010; Lu, Liu, Wright, & Filatotchev, 2014; Wang, Hong, Kafouros, & Wright, 2012).

A number of scholars argue that emerging economy MNEs (EMNEs) in general and Chinese MNEs in particular are major players challenging MNEs from advanced economies (Luo & Tung, 2007; Rui & Yip, 2008; Zeng & Williamson, 2007). Others argue that this claim is exaggerated and based on biased selective anecdotal evidence (Collinson & Rugman, 2007; Jormanainen & Koveshnikov, 2012). Jormanainen and Koveshnikov (2012) suggest that scholars need to be cautious when generalizing from these specific cases because these firms are so rare, and their behaviours and experience may not be representative for the entire population of EMNEs. In fact, these firms are 'outliers' (Collinson & Rugman, 2007; Narula, 2006). In a related manner, Peng, Sun, and Blevins (2011) call for the social responsibility of international business (IB) scholars to rectify the exaggeration of Chinese OFDI portrayed by Western media.

Due to unique characteristics of Chinese MNEs and their internationalization patterns, a number of scholars argue that allegedly the traditional IB theories are not sufficient to explain the internationalization of Chinese MNEs (Child & Rodrigues, 2005; Filatotchev, Strange, Piesse, & Lien, 2007). New theories have been developed using a few case studies and anecdotal

evidence (Luo & Tung, 2007; Mathews, 2006). Others argue that Chinese MNEs do not need firm-specific advantages (FSAs), i.e., proprietary internal strengths of MNEs relative to rivals, to embark on internationalization (Hashai & Buckley, 2014; Hong, Wang, & Kafourous, 2015). On the other hand, Narula (2012) argues that the current theories are sufficient, in which EMNEs behave similarly to MNEs based in developed countries, only that they have different sets of country-specific and firm-specific assets. Thus, the current literature lacks common theoretical grounds and convincing empirical evidence (Jormanainen & Koveshnikov, 2012).

Despite the large volume of literature on Chinese OFDI, little is known about the financial performance of Chinese MNEs in international markets. Some studies examine sales growth and internationalization process through M&As as evidence of success stories of Chinese MNEs' globalization (Liu, 2007; Matthews, 2006). These examples include Lenovo (Liu, 2007; Liu & Buck, 2009; Quelch & Knoop, 2006); Huawei (Hong & Sun, 2006; Luo, Cacchione, Junkunc, & Lu, 2011); Haier (Bonaglia, Goldstein, & Mathews, 2007; Du, 2003; Duysters, Jacob, Lemmers, & Yu, 2009; Palepu, Khanna, & Vargas, 2005; Liu & Li, 2002), and the Wanxiang Group (Warner, Hong, & Xu, 2004).

Given that the literature on Chinese MNEs is based on a few case studies and anecdotal evidence, it will be interesting to find out the number of Chinese manufacturing firms to be true MNEs. An MNE is defined as a firm with at least 10 percent of annual sales in foreign markets and three foreign subsidiaries (Rugman, 1981). Furthermore, there is scarce evidence on the financial performance of Chinese MNEs, particularly the performance of their overseas operations. Against this background, Rugman & Nguyen (2014) suggest that the financial performance of Chinese MNEs should be benchmarked relative to global peers rather left in the limbo of the literature of EMNEs. In this study, we aim to address two research questions:

1. To what extent are the largest 500 Chinese manufacturing firms to be true MNEs by definition?
2. How is the financial performance of Chinese manufacturing MNEs relative to their global peers?

To explain the performance of Chinese MNEs, we develop our theoretical perspectives from the insights of new internalization theory, which is an extension of internalization theory. The MNE expands internationally by establishing a network of foreign subsidiaries rather than by exporting or licensing (Buckley & Casson, 1976; Hennart, 1982; Rugman, 1981). According to Rugman and Verbeke (1992), some forms of FSAs are location-bound. We argue that many large Chinese firms' FSAs are bound to home country-specific advantages (home CSAs) (Rugman & Nguyen, 2014; Rugman, Nguyen, & Wei, 2014; Verbeke, 2013; Voss, Buckley, & Ross, 2009). For this reason, they have difficulty in transferring their FSAs across borders due to their home location-specific characteristics. They have not yet developed new advanced management capabilities through recombination with host CSAs. Thus, they fail to achieve superior financial performance in their overseas operations relative to global peers. We examine this idea using a new original dataset of the largest 500 Chinese manufacturing firms, and the industry financial data from OnceSource Global Business Browse by Thomson Reuters.

We have made several important contributions to the literature. First, we find that among the largest 500 Chinese manufacturing firms, there are only 49 Chinese firms to be true MNEs. The rest is purely domestic firms. After more than one decade of 'going global', most of the largest Chinese manufacturing firms remain oriented to large domestic market. Peng et al. (2011) use macro-level data and find a relatively small amount of Chinese OFDI. We analyze firm-level data and we find that there are relatively few Chinese firms to be true MNEs.

Second, we use the financial benchmarking, which is a well-established method in management accounting and financial management to compare the performance of large manufacturing Chinese MNEs relative to global peers using the industry financial data for the period between 2008 and 2012. These include five-year sales growth, five-year net profit margin, return on asset (ROA), total-debt-to-equity, current ratio, and quick ratio. The financial benchmarking is explained in the methodology section. We find that large manufacturing Chinese MNEs have significantly poor financial performance relative to global peers. We confirm this finding by analyzing the most frequently studied Chinese MNEs in the existing literature. Overall, we find that the literature exaggerates the internationalization and foreign success of Chinese MNEs. Furthermore, our work using the financial benchmarking method is a timely response to the call by finance scholars to integrate contemporary finance into IB research (Agmon, 2006; Bowe, Filatotchev, & Marshall, 2010; Oxelheim, Randoy, & Stonehill, 2001, 2012).

Third, we contribute to the current debate in the literature (Cuervo-Cazurra, 2012): to what extent does the traditional IB theory explain the internationalization and performance of Chinese MNEs? Our theoretical development from new internalization theory (Rugman & Verbeke, 1992, 2001; Verbeke, 2013) is consistent with home country institution view and home country-bounded nature of Chinese MNEs' FSAs (Luo et al., 2010; Rugman, 2009). We show that new internalization theory has robust explanatory power to address this research phenomenon.

The remainder of the paper is organized as follows: the second section reviews the extant literature. The third section presents new internalization theory, which is the theoretical foundation of our study. The fourth section presents empirical work, in which we describe the



source of data and the research methodology. Then, we show our findings. The fifth section discusses and interprets the findings, and presents the conclusions and implications.

## **LITERATURE REVIEW ON CHINESE MNEs**

### **The Literature is Based on as Few as a Dozen Case Studies**

We have carefully examined the literature on Chinese MNEs in the international management and international business journals, edited volumes, and books published between 2000 and 2014, since China initiated its ‘go global’ policy which promotes overseas investment in 2000. We focus on papers presenting either conceptual models or case studies which have been published in leading journals according to Association of Business School (ABS) Academic Journal Guide. These include the *Journal of International Business Studies*; *Journal of World Business*; *International Business Review*; *Management International Review*; *Academy of Management Journal*; *Management and Organization Review*; *Journal of International Management*; *Global Strategy Journal*; *Asia Pacific Journal of Management*.

Paradoxically, the literature has focused only on a small number of high profile Chinese firms. Thus, it provides us little insight into the international activities of the majority of Chinese firms. Table 1 reports 10 Chinese firms which are the most frequently studied in the extant literature, arranged by their foreign (F) to total (T) sales (F/T) ratio for 2012 (column 2), and its related key financial ratios relative to the industry financial data (columns 5 and 6).

*Insert Table 1 here*

### **Home Country Institution and Chinese OFDI**

The home country institution perspective, which is an extension of the institution-based view,

has been widely applied to examine Chinese OFDI (Deng, 2009; Luo et al., 2010; Voss et al., 2009). From a macro-economic perspective, the surge of Chinese OFDI has been attributed to public policies and support by Chinese government in encouraging domestic firms to go abroad (Buckley et al., 2007; Cross et al., 2007). From a micro-economic level, Chinese MNEs' internationalization strategy, such as resource-driven M&As, location choices, and the ownership structure of foreign subsidiaries are mingled with various home country institutional incentives (Cui & Jiang 2012; Rui & Yip 2008; Wang et al., 2012; Zhang, Zhou, & Ebbers, 2011).

Chinese government's support and the role of state ownership, which is a type of Chinese CSAs, confer Chinese firms resource advantages in their OFDI, thus compensate for their lack of intangible knowledge-based FSAs. It is argued that the internationalization may enhance Chinese firms' capabilities to take risks abroad (Buckley et al., 2007; Luo et al., 2010). Government support and artificially cheap credit have greatly increased Chinese firms' purchasing power in international M&As (Child & Rodrigues, 2005; Gammeltoft, Barnard, & Madhok, 2010; Luo et al., 2010). Luo and Tung (2007) develop the springboard view, which argues that Chinese firms use OFDI, especially through M&As of Western MNEs, as a springboard to seek access to sophisticated resources to compensate for their latecomer disadvantages, to mitigate domestic institutional disadvantages, and to secure preferential treatment from home governments.

The common assumption in the current literature is that strategic-asset-seeking FDI, which aim to acquire technology capabilities, global brand, distribution networks, and management expertise is a dominant motive for Chinese M&As. The literature focuses mainly on the benefits that Chinese firms gain from such investments (e.g., Klossek, Linke, & Nippa, 2012; Wang & Boateng, 2007). However, there are relatively few studies examining the costs of such a strategy. Peng (2012) casts doubt on Chinese firms' overseas acquisitions in their pre-acquisition

and post-acquisition phases as they lack experience and fail to undertake due diligence. Rugman et al. (2014) find that less than half of the announced foreign acquisitions of Chinese firms have been successfully completed.

### **Chinese MNEs' Performance is a Mystery**

The financial performance of Chinese MNEs has been under-researched in the extant literature. This is probably due to the fact that Chinese OFDI is a relatively new phenomenon, and its long-term performance is not understood (Peng, 2012). Previous studies find that post-acquisition integration challenges constrain the success of most cross-border M&As (Shimizu, Hitt, Vaidyanath, & Pisano, 2004). Chinese firms could be more vulnerable due to their lack of FSAs, especially the absence of systems integration and internal managerial coordination (Peng, 2012; Rugman, 2009).

The dominant view is that the acquired foreign assets enable Chinese firms to access foreign markets and compete with other MNEs (Liu, 2007; Luo & Tung, 2007; Rui & Yip, 2008). However, there is little evidence to support this claim. A number of studies examine the internationalization process and sales patterns of Chinese firms, which are viewed as evidence of their globalization and international success (Liu, 2007; Matthews, 2006). We show subsequently that sales are not necessarily an indicator of financial stability and sustainability.

## **THEORETICAL DEVELOPMENT**

### **New Internalization Theory**

Internalization theory explains the existence of the MNE when it achieves multinationality through the creation of internal markets to replace missing external intermediate markets. The

MNE is particularly good at overcoming the public good externality of knowledge by substituting its internal market, and using substitutions to transfer tacit knowledge across national borders. The MNE needs to possess FSAs relative to local firms, which should outweigh the costs and risks of doing business abroad due to the liabilities of foreignness (Hymer, 1960; Zaheer, 1995). The MNE establishes property rights over its FSAs so that they would not be dissipated to other firms (Rugman, 1981). In other words, the MNE transfers, deploys, exploits, and protects its FSAs through the use of foreign subsidiaries which monitor, meter, and regulate the use of FSAs abroad (Rugman, 1981; Rugman, Verbeke, & Nguyen, 2011). Overall, internalization theory focuses on the efficiency aspects of the MNE (Buckley & Casson, 1976; Hennart, 1982; Rugman, 1981).

Rugman and Verbeke (1992) develop the concepts of non-location bound and location-bound FSAs (NLB and LB FSAs). The former can be internationally transferred with low costs and little adaptation, and can be deployed and exploited in both home and host countries, and brings the benefits of economy of scale, scope and integration. The latter is bound to a particular location, a country, or a set of countries, or a region and brings the benefits of national responsiveness. Rugman and Verbeke (2001) demonstrate that FSAs can be developed not only by parent firms in the home country (parent-firm FSAs) but also by foreign subsidiaries in host countries (subsidiary-specific advantages SSAs). Previous literature documents that subsidiaries have created new capabilities and competencies in recombination with host CSAs (Andersson, Forsgren, & Holm, 2002; Birkinshaw, 2000; Cantwell & Mudambi, 2005). Rugman and Verbeke (1992, 2001) refer to this contribution as new internalization theory.

Verbeke (2013) advances three types of FSAs. These are stand-alone FSAs through recombination with home CSAs; routines and codification; and recombination capability leading

to tacit knowledge, which is the highest-order FSA. The recombination capability requires the firm not only to transfer abroad its existing set of FSAs developed by parent firms, but also to create new knowledge-based FSAs through the recombination with host CSAs. Such recombination of tacit knowledge requires that MNE managers meld home and host CSAs with FSAs held by geographically dispersed MNE units, and develop novel recombinations (Rugman, et al., 2011; Verbeke, 2013). Hennart (2009, 2012) states that such recombinations of FSAs and host CSAs is very difficult to achieve, since local (host country) resources are monopolized by local firms and are not freely accessible. This constrains and inhibits market entry and expansion of EMNEs (Hennart, 2009).

### **New Internalization Theory and Chinese OFDI**

We argue that the types of FSAs which Chinese firms may possess are built upon home CSAs and deeply embedded in Chinese institutional environments (Rugman et al., 2014; Wei, 2010). These include low-cost labour; large home market size; artificially cheap and implicitly subsidized debt capital; national innovation system; privileged access to government relationships and networks; state ownership and national champion identities; dominant control and access to local input resources in domestic networks and output markets in China (Buckley, 2014; Luo & Wang, 2012; Rui & Yip, 2008; Rugman & Nguyen, 2014; Rugman et al., 2014). In other words, Chinese firms have developed home country-bound FSAs, which is a type of stand-alone FSAs by Verbeke (2013)'s definition. For this reason, it is very difficult for Chinese firms to transfer their FSAs across borders due to home country-specific characteristics (Rugman et al., 2014).

Yet, reliance on home country CSAs might slow down or even impede Chinese firms to invest and to develop knowledge-based intangible types of FSAs. Managers interpret home country CSAs and past experience in local markets as a rationale for the existing success formulae. However, this success may restrain organizational learning when Chinese firms venture internationally. They may become less open to learning from new experiences, and less prepared for adaptations to new demands, and new requirements in international business environments outside China. They may become less motivated to adapt their organizational routines, business systems, and practices to accommodate to host country conditions. They may become less ready to innovate and thereby develop knowledge-based FSAs. Consequently, they find it difficult to turn opportunities in international markets into superior financial performance results for overseas operations.

This phenomenon is akin to what March (1991) calls a ‘success trap’, defined as the focus on the exploitation of (historically successful) current business activities and as such neglect the need of exploration of new opportunities and enhancement of long-term viability. This has also been known as the ‘competency trap’ (Levinthal & March, 1993). The competency trap implies that learning from experiences favors exploitation behavior, in which business practices become focused on well-known alternatives, underestimating the potential benefits of the unknown (March, 1991). Firms come to over-rely on past experiences and do not adjust for new challenges, which are self-destructive behaviour.

In a related manner, Hennart (2012) argues that EMNEs in general derive significant gains from the monopoly of home CSAs. They use this monopoly power to finance intangible-seeking investments in developed countries to obtain FSAs they lack and hence compete with FSA-rich MNEs in domestic and international markets (Hennart, 2012). Our theoretical

perspectives are also in line with home country institution based view (Buckley et al., 2007; Buckley, Clegg, Cross, Voss, Rhodes, & Zheng, 2008).

Chinese MNEs have developed mainly home country-bound FSAs, then how do they integrate acquired strategic assets in foreign markets and turn them into sustainable FSAs? Due to a short period of internationalization, Chinese MNEs still lack integration capabilities and savvy managerial talents, which give us little confidence that they are capable of integrating foreign acquisitions to develop anything resembling tacit knowledge recombination capabilities in host economies (Fan, Nyland, & Zhu, 2008; Peng, 2012; Rugman, 2007). Furthermore, the inefficient and centralized governance structure associated with state ownership (Chen & Young, 2010; Globerman & Shapiro, 2009) may reduce the willingness of Chinese parent firms to give autonomy to foreign subsidiaries to develop FSAs in host countries. In other words, Chinese MNEs have not developed recombination capabilities, which are the highest-order FSAs. Consequently, they find it very challenging to achieve superior financial performance in their overseas operations, because FSAs are key determinants of performance, not multinationality per se (Morck & Yeung, 1991; Nguyen, 2011; Rugman, 1981; Rugman & Verbeke, 2008; Verbeke & Brugman, 2009).

## **METHODOLOGY**

### **Data Sources and Sample**

Our new original dataset of the largest 500 Chinese manufacturing firms comes from China Enterprise Confederation and China Enterprise Directors Association. We examine these firms' annual reports, together with other stock market documents (e.g., prospectuses and various announcements) to obtain their financial data (sales, geographic segments, and number of foreign

subsidiaries). We exclude 136 Chinese manufacturing firms from the dataset due to the unavailability of annual reports. We have a remaining of 364 Chinese firms.

Our financial benchmarking of Chinese manufacturing MNEs' performance relative to the industry financial data (peer group analysis) comes from OnceSource Global Business Browser. It is one of the leading financial intelligence commercial databases provided by Thomson Reuters, Reuters Research Inc., and published by Avention Inc.

### **Financial Benchmarking**

Financial benchmarking is defined as the establishment by the collection of data of comparators which allow relative levels of performance to be identified (Drury, 2009; Seal, Garrison, & Norren, 2011). Financial benchmarking is a well-established method in the fields of management accounting and financial management, and it has been widely adopted by MNEs in business reality. Financial benchmarking uses financial information most often in the form of ratios and metrics to perform these comparisons (Drury, 2009; Seal et al., 2011). When benchmarks are used, the main question is: what is the average level of performance for a given ratio and metric in a specific industry?

One method of benchmarking is peer group analysis. For example, the North American Industry Classification System (NAICS), which is a product of the US Office of Management and Budget, serves as methods of identifying potential peers in the same industry for comparisons. Firms with the same NAICS codes are identified. The financial ratios and metrics from a group of peers in the same industry are generated, which is known as industry financial data benchmark. Once the benchmark is established, we can compare financial ratios of a



particular company relative to the industry financial data or two firms operating in the same industry (Drury, 2009; Seal et al., 2011).

### **Industry Financial Data**

We use OnceSource database to collect financial data of Chinese manufacturing firms identified as true MNEs, and the industry financial data. We contact the Support Centre of OneSource (operated by Avention Inc.) to obtain a document called ‘Risk Management Association (RMA) Industry Norms Data Dictionary’. According to OneSource, the industry financial data are provided by the RMA, which is the most respected source of objective and unbiased information on issues of importance to credit risk professionals. RMA has generated the RMA Annual Statement Studies, which have been the industry standard for comparison of financial data for over 85 years. Today, the RMA features data for over 740 industries (OneSource, 2013).

The RMA has used more than 269,000 financial statements to produce the composite financial data. The financial data come directly from RMA member institutions and represent the financials from their commercial customers and prospects (OneSource, 2013). In order to ensure confidentiality, company names are removed before the data is delivered to RMA. The raw data making up each composite is not available to any third party (OneSource, 2013).

The RMA’s Annual Statement Studies generate Financial Ratio Benchmarks. RMA shows balance sheet and income statement information in common size format, with each item a percentage of total assets and sales. RMA computes common size statements for each individual statement in an industry group, and then aggregates and averages all the figures. A minus sign beside the value indicates credits and losses (OneSource, 2013).

Data is organized into industry in accordance with the NAICS. A NAICS code may correspond to more than one Standard Industrial Classification (SIC), so there may be several SICs listed. If a NAICS code maps to more than three SIC codes, only the first three SICs will be listed at the top of the page, with all corresponding SIC codes found in the NAICS description index (OneSource, 2013). When there are fewer than 10 financial statements in a particular asset or sales size category, the composite data is not displayed because a sample this small is not considered representative and could be misleading.

## **Measurements**

*Degree of internationalization.* An MNE is defined as a firm which is headquartered in one country but having operations in other countries (Rugman, 1981). An MNE must have a ratio of foreign sales over total sales (F/T) at 10 percent and three foreign subsidiaries (Rugman, 1981). The threshold of 10 percent F/T comes from international accounting standards, such as IFRS8-Operating Segments (for firms' reporting in compliance with IFRS), and SFAS No. 131, FASB-Disclosures about Segments of an Enterprise and Related Information (for firms' reporting in compliance with US GAAP).

Foreign sales ratio is measured by foreign sales over total sales (F/T), which has been widely used to measure the degree of internationalization (Hennart, 2011; Li, 2007a; Ruigrok, Amann, & Wagner, 2007). The F/T data which we use in our study is determined by the way Chinese firms report in their annual reports. When we analyze F/T ratio of Chinese firms, we carefully consult their accounting policies and disclosure notes. We find that Chinese firms define foreign sales as sales outside Mainland China and they report sales in Hong Kong and Macau as foreign sales. Foreign sales include both export sales by parent firms from China and

sales generated by their foreign subsidiaries through FDI in host countries. We used F/T data in 2012 for the largest 500 Chinese manufacturers, with the only exception of Suntech. Suntech went bankrupt in 2011, and its annual report became unavailable since then. So, we had to use its data of the year 2011.

*Financial performance.* We use multi-dimensional performance indicators, which measure growth, profitability, financial stability, and management effectiveness of Chinese MNEs (Rugman & Colinson, 2012). OnceSource provides financial performance data of average five-year sales growth, five-year net profit margin, total debt-to-equity ratio, current ratio, quick ratio, and return on asset (ROA) of Chinese firms relative to the industry financial data. The average of five-year data neutralizes variance over time (OneSource, 2013).

## **RESULTS**

### **The Majority of the Largest 500 Chinese Manufacturing Firms are Not MNEs**

We find that among the largest 500 Chinese manufacturing firms, there are only 49 manufacturing firms to be ‘true MNEs’ by a basic definition. Table 2 reports these 49 MNEs, which are ranked by their F/T ratio. The average F/T ratio of Chinese MNEs is approximately 29 percent (including sales in Hong Kong and Macau). Many subsidiaries of these Chinese manufacturers (27 percent of total subsidiaries) are located in Hong Kong and Macau or both, and therefore are not really indicators of FDI. In addition, if Hong Kong and Macau sales were excluded, the F/T ratio of Chinese manufacturing firms would be lower and it is likely that there would be even fewer Chinese manufacturing MNEs. Furthermore, China, as one of the largest exporters in the world, has its domestic firms achieving foreign sales through exporting, as

exports are part of ‘foreign sales’, leaving little left for sales generated by foreign subsidiaries through FDI activities. In short, the majority of the largest Chinese manufacturing firms are purely domestic firms, not MNEs.

*Insert Table 2 here*

We examine these firms’ operations. Specifically, we identify firms operating in material and component manufacturing and those making final products (Table 2, last column). We find that out of the largest 49 Chinese manufacturing MNEs, the majority of them are final product manufacturers, accounting for 71 percent. Based on their F/T data, we find that the average F/T for final product manufacturers is 31 percent, while the average F/T for material and component manufacturers is 26 percent.

We examine these firms’ sales by geographic segments (Table 2). Suntech is the only ‘global’ company with more than 20 percent of its sales in all three regions of the broad triad of North America, Europe and Asia Pacific (Rugman & Verbeke, 2004). Ironically, this Chinese ‘global’ firm underscores the point we make subsequently on the implications of poor financial performance of Chinese firms in their internationalization. In March 2013, Suntech was the first company from Mainland China to default on its US bonds payment of US\$541 million (Morales & Martin, 2013). Subsequently, Suntech’s main unit, Wuxi Suntech Power Holdings Co., Ltd. was placed into insolvency as Chinese banks filed bankruptcy against Suntech (Goossens & Doom, 2013; Sui-Lee, 2013). The company's American Depositary Receipts were delisted from the New York Stock Exchange and placed on the over the counter exchange.

We compare F/T data of these Chinese manufacturing MNEs in 2008 and in 2012 (Table 3). We find that there are no significant changes. Among 49 Chinese MNEs, there are 26 firms which have witnessed a decrease in foreign sales ratio in 2012 compared to 2008. Overall,

Chinese firms focus predominantly on their large Mainland China domestic market, and their foreign sales through FDI are very limited. One plausible explanation is that Chinese firms are unable to achieve foreign sales due to the nature of their home country-bound FSAs and the over-reliance on domestic market.

***Insert Table 3 here***

Our new finding here using a new dataset of large manufacturing firms is fully consistent with Rugman and Nguyen (2014), who find that there are only five MNEs out of the largest 73 Chinese firms in the Fortune Global 500 in 2012. The rest are domestic firms. In addition, we find that the current literature suffers from a basic error. When a firm from an emerging country, especially from China, enters into the Fortune Global 500, it is automatically referred to as an MNE (Guillen & Garcia-Canal, 2010:10). This is not correct.

We revisit Table 1 (column 2): out of the 10 most frequently studied Chinese firms in the extant literature, there are two firms, which are not MNEs, namely, Shanghai Automotive (SAIC) and Aviation Industry Corporation of China (AVIC). The F/T ratio of SAIC is only 0.18 percent, and AVIC has no foreign sales. Indeed, there are only seven firms which have been correctly identified as Chinese MNEs in the extant literature. They are Huawei, Lenovo, ZTE, BOE, TCL, Wanxiang, and Haier. Overall, we find that there are relatively few Chinese manufacturing firms to be MNEs.

The literature on Chinese MNEs also uses other anecdotal evidence, such as Weiqiao Textile, Pearl River Piano, Ping An, Industrial and Commercial Bank of China (ICBC), Bank of China, and Agriculture Bank of China (Hennart, 2012; Zeng & Williamson, 2007). However, a basic analysis of financial data from these firms' annual reports shows that they are not MNEs by a basic definition. In other words, successful Chinese domestic firms (Williamson & Zeng, 2009;

Williamson & Rama, 2013; Zeng & Williamson, 2007) have been chronically misinterpreted as Chinese MNEs.

### **Financial Benchmarking of Large Chinese Manufacturing MNEs Relative to Industry Financial Data**

We use data from OneSource to compare the financial performance of large Chinese manufacturing MNEs with the average industry financial data for the five-year period 2008–2012 (Table 4). As such, the industry and time effects are controlled. We report the significant level by using paired samples two-tailed t-test (Table 5). We find that compared to the industry financial data, the financial performance of Chinese manufacturing MNEs is significantly lower across key financial performance metrics (average five-year net profit margin, return on asset ROA), and they have higher risk profiles in terms of financial stability (total debt-to-equity ratio, current ratio, and quick ratio). Once the basic key performance indicators are applied across Chinese manufacturing MNEs, it is highly unlikely that the case examples in the existing literature can be shown to have successful strategies and sustainable performance.

#### ***Insert Table 4 and Table 5 here***

We revisit Table 1 (columns 4 and 5), in which Huawei, Lenovo, ZTE, TCL are often cited in the literature as evidence of Chinese MNEs' successful internationalization. However, we find that the financial performance (profit and ROA) of these particular MNEs is lower relative to the industry financial data. For example, Huawei's net profit margin for the five-year period is 6.98 percent compared to the industry financial data of 17.97 percent. Lenovo's net profit margin is very thin at 1.86 percent, while the ratio for the industry financial data is nine times higher at 16.98 percent. Similarly, ZTE has been operating at a loss with a negative net

profit margin (3.13 percent) compared to the industry of 17.97 percent. The net profit margin for TCL is 2.29 percent compared to the industry of 3.84 percent. The only Chinese manufacturing MNE with a solid financial performance is Haier, because Haier focuses on Chinese domestic market where it has generated 90 percent of its total sales (Table 1).

Some of the frequently studied Chinese firms (SAIC, ZTE, and TCL) rely heavily on debt financing as reflected in their total-debt-to-equity ratio. This is probably due to their access to easy, artificially cheap, and subsidized debt capital from state-owned banks with mandates to support national champion firms. The financing of large Chinese firms in general has been in the hands of sovereign wealth funds, which are state-owned investment funds (Bremmer, 2009).

Our finding on the high level of debt in the capital structure of Chinese manufacturing MNEs relative to the industry financial data (Table 4) is fully consistent with theoretical arguments by Buckley (2014). He provides a comprehensive discussion on cheap credit (a type of Chinese CSAs). The access to low-cost credit might enable Chinese firms to internationalize by buying out Western firms in cross-border M&As. However, managing these financial resources effectively and efficiently to deliver superior performance results in overseas operations is another matter. This requires advanced international financial management skills, which Chinese firms need more time to develop. In short, Chinese firms have built their FSAs based upon home CSAs, but they have not yet developed advanced management skills in combination with host CSAs. The findings support our theoretical development in the earlier section.

## **The International Strategy of Chinese Firms and its Impact on Performance**

The literature has emphasized the global nature of Chinese giants, such as Lenovo, Huawei and ZTE. We find that Chinese manufacturing MNEs, which report their geographic segment sales, are actually home region oriented, with more than 50 percent of sales in their home region of the triad (Rugman & Verbeke, 2004). To be more precise, the majority of Chinese manufacturing MNEs are oriented to large home country domestic market in China. By focusing on the internationalization activities of the 10 most notable Chinese firms, and mainly their acquisitions of Western firms, the existing literature shows an inherent bias in exaggerating Chinese firms' international success.

It is argued that MNEs from emerging markets have strong absorption capacity, which allows them to recognize, to access, to develop new knowledge, and to combine these resources with cost innovation capabilities developed at home (Deng, 2007; Williamson & Zeng, 2009; Zeng & Williamson 2007). We show that the acquired strategic assets potentially enable Chinese firms to enhance their competitive position in China, but cannot sustain their success in overseas markets. We find that sales growth of Chinese manufacturing MNEs is mainly attributed to sales growth in domestic market, not in international markets. This is due to our careful analysis of Chinese firms' sales by geographic segments and market share data by re-examination of the frequently-studied firms, and thus we can offer new insights.

#### *Re-examination of frequently-studied Chinese firms*

*Lenovo.* Lenovo has been used as an example of a promising Chinese MNE, with particular emphasis on its acquisition of IBM's personal computer division. There is consensus in the literature that the acquisition has enabled Lenovo to build a global brand, and to reach global customers by using IBM's brand, production lines, and management expertise, worldwide



distribution and sales networks (Child & Rodrigues, 2005; Liu, 2007; Luo & Tung, 2007; Mathews, 2006; Rui & Yip, 2008; Zeng & Williamson, 2007). By taking IBM's worldwide PC market share, Lenovo became the third largest PC manufacturer in the world in 2005. According to Gartner, Inc., Lenovo has been among the top five global companies in terms of worldwide PC vendor market share from 2005 to 2012.

We find that Lenovo's global market share is largely attributable to its leading position in China rather than in international markets. Lenovo's foreign sales in Asia Pacific, Europe, and the Americas, compared to its total sales, have been shrinking since 2005 (Lenovo annual reports, various years). After the acquisitions, Lenovo experienced difficulty in maintaining IBM's PC market share in the United States. Based on Gartner data, Lenovo is among the top five PC manufacturers in the US market in 2005 (the year Lenovo completed the purchase of IBM's PC business). Since then Lenovo has dropped out of the top five in the US. It was not until 2012 that Lenovo reached the fifth place in the US market share.

In contrast, Lenovo has increased significantly its domestic market share and its domestic sales ratio in China after the acquisition (Lenovo annual reports, various years). Our empirical findings show that the acquisition of the IBM's PC division has not enabled Lenovo to succeed beyond its core home market. In the same vein, the five-year sales growth of Lenovo is only 15.58 percent whereas the industry growth rate is 27.16 percent (Table 1).

*TCL.* TCL acquired Schneider Electronics in 2002. TCL acquired French Thomson's global colour TV business (branded RCA) and become the world's largest TV producer. TCL acquired Alcatel's global mobile phone business in 2004. TCL sells mainly the Thomson and Schneider brand in the European market and RCA brand TVs in North America (TCL, 2002, 2004).

However, due to financial difficulties of European operations, TCL Thomson Electronic (TTE) Europe has been downsized, and it was returned to Thomson in 2006 (TCL, 2006). At the same time, ongoing poor performance instigated the voluntary wind-up of Schneider Electronics in 2011 (TCL, 2011). Although RCA has nine percent of the market share in the US market, it is perceived as old-fashioned and used mainly by elderly Americans (Bell, 2008).

These acquisitions have not paved the way for TCL's future international expansion. Its foreign sales in the North American and European markets decreased from 48 percent to 23 percent of total sales between 2005 and 2008, while its domestic sales increased from 37 percent to 69 percent between 2005 and 2011 (TCL Annual report, various years). In other words, while TCL's five-year sales growth of 12.25 percent is higher than the industry financial data of 3.71 percent, it is attributable mainly to strong sales growth in Mainland China market, not in international markets (Table 1).

*Shanghai Automotive (SAIC).* The acquisitions of MG Rover (UK) and SsangYong Motor (South Korea), which have been discussed intensively in the literature, have failed to make SAIC to be a true MNE. Only 0.18 percent of its total sales have been generated from foreign sales (Table 1). Furthermore, due to deterioration, South Korean SsangYong Motor went bankrupt and filed to restart operations in 2009 with Seoul Central District Court (SAIC, 2009).

*BOE.* The literature highlights the acquisition by BOE Technology. For example, BOE acquires Korean firm HYDIS's TFT-LCD production line, which has been cited to improve BOE's technology and strengthen its global sales network and service system (Deng, 2007, 2009; Zeng & Williamson, 2007). However, due to operating difficulties, BOE HYDIS has applied for the

Legal Reorganization Procedure to Central District Court in 2006, and has lost control (BOE, 2007). BOE generates much of its sales in Asian countries.

*Haier.* Haier is another well-known example of Chinese firm's internationalization with primary focus in the United States. Haier established facilities in an industrial park in South Carolina, a marketing venture in New York, and an R&D/design centre in Los Angeles, which aim to improve brand reputation, draw on local expertise in design and technology, and target local customers (Child & Rodrigues, 2005; Duysters et al., 2009). It has been argued that Haier's presence in the United States not only yields local market share, but also supports its investments in other countries (Deng, 2004, 2007). However, Haier's foreign sales account for only 11.40 percent of its total sales in 2012 (Table 1). If sales in Hong Kong and Macau were excluded from the calculation of foreign sales, Haier would be a home country-based firm, which generates the vast majority of its sales from domestic market in Mainland China (Table 1).

*Wanxiang Group.* Wanxiang Group's interest in the US market is evident by its acquisitions of several American companies, including Zeller Corporation, LT Company, UAI Company, GBC Company, PS Corporation, AI Company, and ACH. In 2013, Wanxiang obtained the US government's approval to buy the bankrupt electric-car battery maker, A123 Systems, in order to enhance the technology that A123 has developed. With internationalization and strategic-asset acquisition, Wanxiang has expanded its foreign markets. However, its focus remains on China, as foreign sales account for only 15 percent of total sales in 2012 (Table 1). In short, our analysis of the most popular case studies of Chinese MNEs' internationalization success stories in the

extant literature provides new interesting insights. We find that Chinese MNEs have achieved growth mainly in home country market, not in international markets.

## **DISCUSSION**

### **Implications for Theoretical and Empirical Literature**

Our study reveals superficial thinking in much of the extant literature on Chinese MNEs' internationalization and performance. We emphasize that the theory on the strategy of Chinese MNEs needs to be empirically validated in the performance of the firms (Rugman & Nguyen, 2014). Furthermore, the literature based on 10 case studies and anecdotal evidence of Chinese firms has led to the misinterpretation of theories and misplaced call for new theories. We show that new internalization theory (Rugman & Verbeke, 1992, 2001; Verbeke, 2013) has fully robust explanatory power. Chinese MNEs have home country-bound FSAs, which are deeply embedded in home CSAs (Rugman & Li, 2007; Rugman et al., 2014; Rugman & Nguyen, 2014). They have difficulty in transferring these FSAs across borders. In addition, they have not yet developed advanced management capabilities in recombination with host CSAs. Thus, they fail to achieve superior financial performance in overseas operations.

Interestingly, we find that among the largest 500 Chinese manufacturing firms, there are only 49 to be true MNEs, whereas the rest is purely domestic firms. The financial performance of Chinese manufacturing MNEs is poor relative to global peers using financial benchmarking method with the industry financial data (peer group analysis). Because of the home country-bound nature of FSAs, such as government support and the lack of recombination capabilities with host CSAs, Chinese MNEs are unable to explore and secure foreign markets by deploying and exploiting the newly acquired strategic assets. Their sales growth has been mainly attributed

to the success in domestic markets. Large Chinese manufacturing MNEs with OFDI activities, such as Lenovo, Huawei, and Haier might aim to increase their sales in international markets to gain global competitive positions. But, at least until now, they are only capable of growing by recombining their FSAs (including the foreign acquired assets) with China's home CSAs, but not with host CSAs. Chinese MNEs' FSAs built upon Chinese CSAs may give them the opportunity to develop new FSAs based on their foreign activities. Unfortunately, we still find little evidence that this has occurred. We suggest that going forward, the literature on Chinese MNEs needs to better align theory with empirical evidence.

### **Implications for Practice**

Our findings provide important strategic implications for Chinese managers and public policy makers. Managerial effectiveness cannot tolerate a lack of focus on financial performance, which is critically important for firms' survival in the short term and in the long term. Policy makers are recommended to implement effective controlling and monitoring mechanisms to prevent potential abuses of government resources, especially credit financing, which may lead to wasteful investments and corruption. Chinese government is recommended to encourage firms to develop internationally transferrable FSAs, such as technology, global brands, and managerial capabilities, because they ensure the sustainability of firms' internationalization and performance.

### **Limitations and Future Research Implications**

Our study has several limitations, which might open a new direction for future research. To address our research questions, we focus on the largest 500 Chinese manufacturing firms,

because of the important role of manufacturing in China. We use the financial benchmarking method to examine the performance of Chinese manufacturing MNEs relative to global peers. However, we cannot test hypotheses using regression techniques. This is because we find that there are only 49 firms out of the largest 500 Chinese manufacturers to be true MNEs. With such a small sample size of 49 manufacturing MNEs, the results from a multiple regression undermine the reliability, and the resulting estimates of error are potentially unreliable and may under or overestimate the true error (Hair et al., 2010). We recommend that future research examine large Chinese service firms or a combination of service and manufacturing firms, identify the number of firms to be true MNEs, and compare and contrast the results with our findings. If the sample size of Chinese firms to be true MNEs is sufficiently large, it will be interesting to extend our study by using multivariate data analysis.

Future research needs to be more cautious in interpreting domestic Chinese firms as MNEs. We find that the majority of the largest Chinese manufacturing firms are home country based as they rely heavily on domestic market for their sales activities. Although Chinese OFDI has attracted significant attention in academic literature, there is still inadequate research on financial performance of international operations of Chinese firms. First, we demonstrate that performance is not driven by multinationality, so it is incorrect to interpret Chinese firms as successful MNEs based on their foreign activities such as M&As.

Second, we show that FSAs are key determinants of performance. On the one hand, Chinese firms are still lacking traditional Western types of FSAs (Hennart, 2012; Wei, 2010). On the other hand, Chinese firms fail to demonstrate a successful performance in international markets due to their lack of the recombination capabilities with host CSAs. The relationship between Chinese firms' FSAs and their performance makes great contribution to both IB theory

and the literature on EMNEs. Future empirical analysis with firm-level data on FSAs and performance is needed in order to shed new light into this important phenomenon.

Third, we show that over-reliance on home country CSAs (e.g. large domestic market for sales, low-cost credit financing, and low-cost labour for manufacturing, etc.) as a source of advantages might eventually become a source of risks for Chinese firms. They might be less prepared to innovate and develop FSAs which are based on knowledge, information, and intellectual properties (e.g. advanced technology, global brands, and international managerial skills). The paradox is that they might be constrained in home country institutional deficiencies, which they seek to escape through internationalization in the first place (Witt & Lewin, 2007). Further research on the impact of home country CSAs on foreign performance of Chinese firms is needed.

## **CONCLUSION**

New internalization theory with two dimensions of firm-specific advantages (FSAs) and home and host country-specific advantages (CSAs) are particularly valuable in explaining the internationalization and performance of Chinese MNEs. We find that there are relatively few Chinese manufacturing firms to be true MNEs by a basic definition (only 49 MNEs out of the largest 500 Chinese manufacturing firms). They rely on home country CSAs and government support rather than internationally transferrable FSAs to embark on internationalization. The cross-border expansion through acquisitions tends to yield non-sustainable FSAs. They have not yet developed new FSAs in combination with host CSAs. Consequently, their financial performance is poor relative to global peers using the industry financial data benchmarking method.

## NOTES

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Table 1. List of the 10 most frequently studied Chinese firms

No	Firms	Foreign sales/Total sales (F/T)	Financial performance indicators	Firm ratios	Industry financial data	Literature
1	Huawei	66.59	Sales 5-year growth (%)	7.84	14.13	Child & Rodrigues, 2005; Hennart, 2012; Luo et al., 2011; Parmentola, 2011; Rui & Yip 2008; Sun, 2009; Tylecote, Cai, & Liu, 2010; Zeng & Williamson, 2007
			Net profit margin for 5 year (%)	6.98	17.97	
			Debt-to-equity	0.28	0.27	
			Current ratio	1.60	3.07	
			Quick ratio	1.38	2.60	
			ROA (%)	7.62	7.97	
2	Lenovo Group	57.00	Sales 5-year growth (%)	15.68	27.16	Boisot & Meyer, 2008; Chen & Young, 2010; Child & Rodrigues, 2005; Deng, 2007, 2009; Hashai & Buckley, 2014; Hennart, 2012; Klossek, et al., 2012; Li, 2007b; Liu, 2007; Liu & Buck, 2009; Luo & Tung, 2007; Mathews, 2006; Peng, 2012; Quelc & Knoop, 2006; Rui & Yip, 2008; Yang, Jiang, Kang, & Ke, 2009; Zeng & Williamson, 2007
			Net profit margin for 5 year (%)	1.86	16.98	
			Debt-to-equity	0.22	0.18	
			Current ratio	1.02	1.66	
			Quick ratio	0.86	1.35	
			ROA (%)	3.86	19.26	
3	ZTE Corporation	53.12	Sales 5-year growth (%)	19.35	14.13	Luo & Tung, 2007; Parmentola, 2011; Tylecote et al., 2010; Zeng & Williamson, 2007
			Net profit margin for 5 year (%)	3.13	17.97	
			Debt-to-equity	2.11	1.38	
			Current ratio	1.25	3.07	
			Quick ratio	1.05	2.60	
			ROA (%)	(2.57)	7.97	
4	BOE Technology Group	43.20	Sales 5-year growth (%)	18.20	4.79	Deng, 2007, 2009; Liu & Buck 2009; Zeng & Williamson, 2007
			Net profit margin for 5 year (%)	4.36	(4.26)	
			Debt-to-equity	0.80	0.22	
			Current ratio	2.21	2.64	
			Quick ratio	1.98	2.06	
			ROA (%)	1.92	3.24	
5	TCL Corporation	37.43	Sales 5-year growth (%)	12.25	3.71	Child & Rodrigues, 2005; Deng, 2007, 2009; Hong & Sun, 2006; Li, 2007b; Luo & Tung, 2007; Parmentola, 2011; Peng, 2012; Yang et al., 2009
			Net profit margin for 5 year (%)	2.29	3.84	
			Debt-to-equity	2.54	0.23	
			Current ratio	1.18	3.17	
			Quick ratio	0.89	2.41	
			ROA (%)	2.22	3.71	

Table 1. List of the 10 most frequently studied Chinese firms (continued)

No	Firms	Foreign sales/Total sales (%)	Financial performance indicators	Firm ratios	Industry financial data	Literature
6	Wanxiang Group	15.09	Sales 5-year growth (%) Net profit margin for 5 year (%) Debt-to-equity Current ratio Quick ratio ROA (%)	n.a	n.a	He & Lyles, 2008; Warner et al., 2004; Zeng & Williamson, 2007
7	Haier Electronics Group	11.40	Sales 5-year growth (%) Net profit margin for 5 year (%) Debt-to-equity Current ratio Quick ratio ROA (%)	22.06 5.48 0.96 1.27 1.06 9.50	8.96 3.98 0.55 2.14 1.32 5.32	Bonaglia et al., 2007; Child & Rodrigues 2005; Deng, 2007; Du, 2003; Duysters et al., 2009; Hashai & Buckley, 2014; Hennart, 2012; Hong & Sun, 2006; Klossek et al., 2012; Li, 2007b; Liu & Li, 2002; Luo & Tung, 2007; Palepu et al., 2005; Warner et al., 2004; Yang et al., 2009
8	Shanghai Automotive Industry Corporation (SAIC)	0.18	Sales 5-year growth (%) Net profit margin for 5 year (%) Debt-to-equity Current ratio Quick ratio ROA (%)	10.47 4.18 1.18 1.21 1.05 0.24	1.71 7.41 0.50 1.64 1.09 0.82	Child & Rodrigues, 2005; Deng, 2009; Rui & Yip, 2008
9	Aviation Industry Corporation of China (AVIC)	0.00	Sales 5-year growth (%) Net profit margin for 5 year (%) Debt-to-equity Current ratio Quick ratio ROA (%)	23.50 2.55 n.a n.a n.a 1.13	7.46 6.92 1.38 1.68 0.85 6.28	Goldstein, 2006; Williamson & Zeng, 2009; Williamson & Raman, 2013; Zeng & Williamson, 2007
10	Galanz Enterprise Group	n.a	Sales 5-year growth (%) Net profit margin for 5 year (%) Debt-to-equity Current ratio Quick ratio ROA (%)	n.a	n.a	Child & Rodrigues, 2005; Ge & Ding, 2008

*Notes:* Data is from OneSource Database (by Thomson Reuters, Reuters Research Inc., published by Avention Inc., 2013, data as of March 31, 2013). Sales five-year growth, and net profit margin for 5 year (%) are derived from the five-year period of 2008-2012; other company ratios are calculated from the 2012 data, with corresponding industry ratios reflecting ratios for 2012; data on F/T is from 2012 annual reports of the companies.

Table 2. The 49 Chinese manufacturing MNEs by F/T for 2012

	Companies	Rank in the 500	Revenues (US\$ Billion)	F/T (%)	America %	Europe %	Asia %	ROW %	No. of foreign subsidiaries the regions HK & Macao		Industries
1	Suntech Power Holdings	238	334.82	88.20	23.00	45.50	20.70	10.80	6	2	Solar energy solutions
2	Shenzhou International Group	431	149.40	80.10	8.10	20.70	51.30	19.90	7	4	Knitwear products
3	LDK Solar	321	230.12	75.00	8.70	33.70	57.60		17	4	Solar energy solutions
4	Huawei Technologies	15	3,368.91	66.59	14.46	35.16	50.38		14	3	Networking & telecommunications equipment and services
5	Lenovo Group	18	3,024.45	57.00	15.00	21.00	64.00		31	6	Computers technology
6	Zhejiang Wanfeng Auto Wheel	456	132.44	54.93					3	0	Aluminum alloy wheels for automobiles and motorcycles*
7	ZTE Corporation	51	1,424.92	53.12		24.75	65.94	9.31	12	5	Telecommunications equipment and network solutions
8	Ningbo Veken Elite Group	293	265.68	53.20					3	0	Home textiles, yarn, fabric and garments
9	Eastcompeace Technology	413	100.94	47.26					6	1	Smart card products and system solutions
10	Zhongjin Lingnan Nonfemet	253	308.41	45.84					4	2	Lead, zinc and other non-ferrous metals*
11	Zhejiang Hailiang	72	1,120.01	44.32					5	1	Copper pipes and copper rods*
12	GD Midea Holding Company	29	2,215.60	43.22					14	3	Consumer electronics and home appliances
13	BOE Technology Group	343	210.49	43.20	3.67	8.46	87.75	0.12	5	0	Thin-film transistor-liquid crystal displays
14	Lifan Industry Group	262	300.66	42.24					14	3	Motorcycles, automobiles and general gas engines
15	TCL Corporation	80	1003.62	37.43					50	28	Electronics
16	Zhejiang Sanhua	438	144.90	36.83					8	0	Refrigeration and air-conditioning control components*
17	Hai Tian International Holdings	408	168.18	31.40					7	3	Plastic injection molding machines
18	Western Mining Group	193	413.12	31.12					2	3	Alloy and metal minerals*
19	Tsinghua Tongfang	225	346.29	29.05					24	5	Consumer electronics
20	Accelink Technologies	381	184.95	27.62					2	1	Optical components*
21	Sinopec Group	1	42,158.23	25.05					12	4	Oil refining and petrochemical products
22	Guangxi Liugong Machinery	218	356.36	25.01					11	2	Construction machinery
23	Shanghai Electric Group	42	1,533.72	23.40					12	2	Electrical equipment
24	Hisense Electric Corporation	70	1,182.43	23.00					9	2	Home electrical appliances
25	Shantui Construction Machinery	309	242.88	22.50					4	2	Construction equipment
26	Ningbo Huaxiang Electronic	491	108.12	21.45					5	0	Automobile components*



Table 2. The 49 Chinese manufacturing MNEs by F/T for 2012 (continued)

	Companies	Rank in the 500	Revenues (US\$ Billion)	F/T (%) Year 2012	America %	Europe %	Asia %	ROW %	No. of foreign subsidiaries		Industries
									Other regions	HK& Macao	
27	XCMG Construction Machinery	49	1,439.52	20.93					4	1	Construction machinery and equipment
28	Sany Heavy Industry	60	1,324.90	19.42					13	2	Heavy machinery
29	Shan Dong Sun Paper Industry	187	427.17	17.77					2	1	Paper
30	Zhejiang Longsheng Group	285	273.26	17.62					8	5	Chemical products (e.g., textile chemicals, construction chemicals etc.)
31	BYD Company	102	806.62	17.31	1.60	2.70	89.20	6.50	12	3	Automobiles and rechargeable batteries
32	Wan Xiang Corporation	56	1,380.12	15.09					10	3	Automotive components*
33	Taiyuan Heavy Industry	291	266.53	14.86					4	0	Heavy-duty machinery
34	Yunnan Tin	221	349.60	14.82					2	1	Tin products
35	Xingjiang TBEA Group	213	372.31	14.42					5	0	Electric power transmission and transformation equipment
36	Shandong Chenming Paper	173	444.22	14.24					2	1	Paper
37	Great Wall Motor	158	497.08	13.96					2	2	Automobile
38	Xing Fa Group	383	184.47	13.90					2	1	Phosphates products and fine chemical products
39	Guangdong Greetoo Molds	268	295.07	13.71					6	2	Tire mold
40	China Xd Electric	311	239.88	13.53					3	1	Electrical Machinery
41	Sichuan Changhong Electric	65	1,264.67	13.41					7	1	Consumer electronics
42	Huazhi Holding (Zhejiang)	355	200.84	12.90					4	0	Electric energy meters
43	Hunan Valin Steel	55	1,387.10	13.26					2	1	Iron and steel products*
44	Shandong Nanshan Aluminium	77	1,050.74	11.35					4	0	Aluminum products*
45	Shougang Group	11	3,857.38	11.30					4	1	Iron and steel products*
46	Haier Electronics Group	26	2,493.36	10.52					14	4	Consumer electronics and home appliances
47	China CNR Corporation	47	1,474.15	10.50					2	1	Rail transportation equipment
48	Baosteel Group	6	5,224.37	10.15					13	4	Iron and steel products*
49	Brilliance China Automotive	48	1,445.58	10.09	4.09		94.41	1.50	8	0	Automobiles, micro-vans, and automotive components*

Sources: Authors' calculation. *Note:* (\*) indicates material and component manufacturers, whereas the rest are final product manufacturers.

Table 3. 49 Chinese manufacturing MNEs by F/T for 2008 and 2012

	Companies	F/T (%)			Companies	F/T (%)	
		2008	2012			2008	2012
1	Suntech Power Holdings	93.00	88.20	26	Ningbo Huaxiang Electronic	1.63	21.45
2	Shenzhou International Group	81.0	80.10	27	XCMG Construction Machinery	35.38	20.93
3	LDK Solar	71.8	75.00	28	Sany Heavy Industry	29.17	19.42
4	Huawei Technologies	60.39	66.59	29	Shan Dong Sun Paper Industry	2.78	17.77
5	Lenovo Group	63.00	57.00	30	Zhejiang Longsheng Group	13.13	17.62
6	Zhejiang Wanfeng Auto Wheel	60.69	54.93	31	BYD Company	14.80	17.31
7	ZTE Corporation	60.57	53.12	32	Wan Xiang Corporation	0.84	15.09
8	Ningbo Veken Elite Group	57.86	53.20	33	Taiyuan Heavy Industry	6.78	14.86
9	Eastcompeace Technology	47.70	47.26	34	Yunnan Tin	27.95	14.82
10	Shenzhen Zhongjin Linnan Nonfemet	18.21	45.84	35	Xingjiang TBEA Group	18.91	14.42
11	Zhejiang Hailiang	69.81	44.32	36	Shandong Chenming Paper	13.32	14.24
12	GD Midea Holding Company	36.29	43.22	37	Great Wall Motor	NA	13.96
13	BOE Technology Group	50.24	43.20	38	Xing Fa Group	49.85	13.90
14	Lifan Industry Group	46.58	42.24	39	Guangdong Greatoo Molds	14.60	13.71
15	TCL Corporation	48.00	37.43	40	China Xd Electric	6.02	13.53
16	Zhejiang Sanhua	51.25	36.83	41	Sichuan Changhong Electric	13.53	13.41
17	Hai Tian International Holdings	38.74	31.40	42	Huazhi Holding (Zhejiang)	8.35	12.90
18	Western Mining Group	3.64	31.12	43	Hunan Valin Steel	21.94	13.26
19	Tsinghua Tongfang	13.89	29.05	44	Shandong Nanshan Aluminium	12.52	11.35
20	Accelink Technologies	33.22	27.62	45	Shougang Group	1.48	11.30
21	Sinopec Group	NA	25.05	46	Haier Electronics Group	16.87	10.52
22	Guangxi Liugong Machinery	13.28	25.01	47	China CNR Corporation	5.67	10.50
23	Shanghai Electric Group	15.08	23.40	48	Baosteel Group	12.22	10.15
24	Hisense Electric Corporation	19.91	23.00	49	Brilliance China Automotive Holdings	NA	10.09
25	Shantui Construction Machinery	23.40	22.50				

Sources: Authors' calculation.

Table 4. Financial benchmarking on the performance of Chinese manufacturing MNEs relative to the industry financial data

### Descriptive statistics

Pair	Sample	Mean	Standard deviation	Standard error mean
Pair 1: Five-year sales growth (%)	Chinese MNEs	14.95	6.98	2.20
	Industry financial data	9.37	7.53	2.38
Pair 2: Net profit margin (%)	Chinese MNEs	2.87	2.61	0.82
	Industry financial data	10.40	7.01	2.21
Pair 3: Debt-to-equity ratio	Chinese MNEs	1.60	1.16	0.36
	Industry financial data	0.59	0.44	0.14
Pair 4: Current ratio	Chinese MNEs	1.25	0.46	0.14
	Industry financial data	2.68	0.98	0.31
Pair 5: Quick ratio	Chinese MNEs	1.03	0.47	0.15
	Industry financial data	2.06	0.80	0.25
Pair 6: Return on assets (ROA)	Chinese MNEs	1.90	4.03	1.27
	Industry financial data	7.35	5.09	1.61

*Note:* Data is from OneSource Database (by Thomson Reuters, Reuters Research Inc., published by Avention Inc., 2013, data as of March 31, 2013).

Table 5. Paired samples t-test

Pair	Sample	Mean	Standard deviation	Standard error mean	Correlation	Significance (2-tailed)
Pair 1: Five-year sales growth (%)	Chinese MNEs - Industry financial data	5.58	10.15	3.21	0.02	0.11
Pair 2: Net profit margin (%)	Chinese MNEs - Industry financial data	-7.534	7.46	2.35	0.00	0.01
Pair 3: Debt-to-equity ratio	Chinese MNEs - Industry financial data	0.99	1.07	0.33	0.39	0.01
Pair 4: Current ratio	Chinese MNEs - Industry financial data	-1.438	1.16	0.36	-0.19	0.00
Pair 5: Quick ratio	Chinese MNEs - Industry financial data	-1.03	0.98	0.31	-0.11	0.00
Pair 6: Return on assets (ROA)	Chinese MNEs - Industry financial data	-5.44	6.26	1.97	0.07	0.01

*Note:* Data is from OneSource Database (by Thomson Reuters, Reuters Research Inc., published by Avention Inc., 2013, data as of March 31, 2013).